

REMARKS

By this amendment, claims 6 and 14 revised, new claims 15 and 16 are added, and arguments are submitted to place this application in condition for allowance. Currently, claims 1-16 are before the Examiner for consideration on their merits.

First, the revision to claim 6 overcomes the rejection based on 35 U.S.C. § 112, second paragraph. Since claim 14 paralleled claim 6, it was also revised and it is now in compliance with 35 U.S.C. § 112, second paragraph.

Second, Applicants traverse the rejection based primarily on JP 200-345252 to Shimozaki et al. (Shimozaki).

In review, claim 1 recites a method of purifying a metal salt which comprises bringing the metal salt formed by melting an alkali metal salt, an alkaline earth metal salt or a mixture thereof into contact with one or more of titanium, titanium alloy, zirconium and zirconium alloy, thereby adsorbing impurities in the metal salt.

In the rejection based on 35 U.S.C. § 102(b), the Examiner contends that Shimozaki discloses the purification of mixed molten material of metallic calcium, molten calcium chloride and titanium wherein the calcium chloride is brought to its melting point in order to coat titanium. The Examiner further contends that when calcium chloride reacts with titanium, salt is absorbed by the titanium.

The rejection based on Shimozaki is improper since Shimozaki does not teach a method of purifying salt using titanium, whereby impurities in the titanium are absorbed into the salt. Instead, Shimozaki is characterized by deoxidizing titanium, which is totally unrelated to purification of salt. In Shimozaki, a film of mixed molten material composed of metallic calcium metal and molten calcium chloride is formed on the surface of a titanium material in an

inert gas atmosphere. This mixture is held at temperatures of 800 °C or more to proceed with the deoxidizing of the titanium. By doing this particular process, it becomes possible to prevent the accumulation of an oxide calcium being formed on the surface of the titanium material during the deoxidation stage. This lowers the deoxidizing marginal limit for the titanium, while allowing an extra low oxygen titanium material to be obtained.

Since Shimozaki is not in the least concerned with purifying a metal salt using titanium, it cannot be said to teach the explicit steps of claim 1 and the rejection must be withdrawn.

In addition, in the event that the Examiner is relying on inherency to support the rejection, this position is also flawed. While a stance on inherency is not expressed in the rejection, the Examiner appears to be saying that when the salt, i.e., the calcium chloride, reacts with the titanium, the mere fact the salt and titanium are in contact with each other means that “salt is absorbed by the titanium.” First, this statement does not appear to make sense when considering the language of claim 1 and the requirement that the molten salt is brought into contact with titanium for the purpose of removing impurities from the titanium not absorbing salt by titanium. Another problem with this position is that the Examiner is speculating on the process of removing impurities from the titanium using the salt in the process of Shimozaki. There is absolutely no disclosure in Shimozaki whatsoever regarding purification of the salt. Therefore, the only way that the Examiner could support the position of inherency would be to say that since the process of Shimozaki and the invention are the same or similar, the absorption of impurities by the titanium, i.e., the purification of the salt, would necessarily occur. However, the processing of the invention and Shimozaki are not in the least similar and the Examiner does not have a proper basis from which to allege inherency. This is simply accomplished by comparing the Abstract of Shimozaki and the specification.

In addition, the inherency position fails when considering the limitation of new claims 15 and 16, each of which requiring the formation of a molten salt bath and addition of the titanium thereto. This processing is not disclosed or even hinted in Shimozaki, and claims 15 and 16 are also patentable over this reference.

The rejection of claim 4 is also improper. This claim requires that the metallic calcium is added to the purified salt and then bringing this combination into contact with the titanium. In Shimozaki, there is no two step sequence of purifying the salt and then deoxidizing the titanium. Shimozaki is just a deoxidized method using the molten calcium and molten calcium chloride. Even considering the embodiment wherein the calcium chloride is melted when on the surface of the titanium and then using a vapor of metallic calcium to contact the coated film of calcium chloride, this is nowhere similar to the method of first purifying the salt and then deoxidizing the titanium as set forth in claim 4. Therefore, this claim is separately patentable over the prior art.

Applicants note the Examiner's reliance on the secondary references of JP 04-099829 to Oishe et al. and JP 03291391 to Shindo et al. to address deficiencies in Shimozaki with respect to dependent claims 2, 3, 8, 11, 13, and 14. However, Oishe et al relates to a method for producing an extra low oxygen titanium, and Shindo et al relates to a method for producing a high-purity titanium, either of which does not describe the purification method of the metal salt of the claimed invention. Thus, even if Oishe et al. and Shindo et al. were combined with Shimozaki, the invention of claim 1 would not be taught.

In summary, it is respectfully submitted that claim 1 is not taught by Shimozaki, either expressly or inherently. Moreover, the steps of claims 15 and 16 as well as the combination method of claim 4 are not found within the four corners of this reference. Therefore, each of these claims along with the remaining dependent claims are in condition for allowance.

Accordingly, the Examiner is requested to examine this application and pass all pending claims onto issuance.

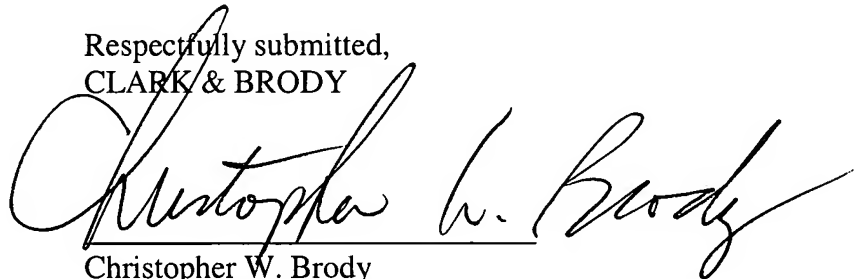
If the Examiner believes that an interview would be helpful in expediting the allowance of this application, the Examiner is requested to telephone the undersigned at 202-835-1753.

The above constitutes a complete response to all issues raised in the Office Action dated August 9, 2007.

Again, reconsideration and allowance of this application is respectfully requested.

Applicants respectfully submit that there is no fee required for this submission, however, please charge any fee deficiency or credit any overpayment to Deposit Account No. 50-1088.

Respectfully submitted,
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